

AGREEMENT  
BETWEEN  
THE UNITED STATES NUCLEAR REGULATORY COMMISSION  
AND  
THE TECHNICAL RESEARCH CENTRE OF FINLAND (VTT)  
RELATING TO  
PARTICIPATION IN THE USNRC PROGRAM  
OF SEVERE ACCIDENT RESEARCH

This Agreement is made between the United States Nuclear Regulatory Commission, hereinafter referred to as the USNRC, and the Technical Research Centre of Finland, hereinafter referred to as VTT. VTT will coordinate the technical information exchange associated with this Agreement with the following organizations in Finland: Radiation and Nuclear Safety Authority (STUK), Fortum Oyj, and Teollisuuden Voima Oy (TVO).

Considering that the USNRC and the VTT, hereinafter referred to as the Parties:

1. Have a mutual interest in cooperation in the field of severe accident safety research with the objective of improving and thus ensuring the safety of civilian nuclear installations on an international basis;
2. Recognize a need to equitably share both the resources resulting from this research and the effort required to develop those resources;
3. Have cooperated in the past under a joint Agreement between the USNRC and VTT which was renewed in May 2001 for an additional three-year period through January 1, 2004;
4. Recognize the Arrangement between the United States Nuclear Regulatory Commission (USNRC) and the Radiation and Nuclear Safety Authority (STUK) for the Exchange of Technical Information and Cooperation in Nuclear Safety Matters, signed on December 31, 2001, hereinafter referred to as the "Arrangement";

The Parties have AGREED as follows:

#### ARTICLE I - PROGRAM COOPERATION

The Parties, in accordance with the provisions of this Agreement and subject to applicable laws and regulations in force in their respective countries, will join together in cooperative research for the severe accident research program sponsored by the USNRC and for similar research programs sponsored by the VTT.

## ARTICLE II - FORMS OF COOPERATION

Cooperation between the Parties may take the following forms:

- A. Exchange of information in the form of technical reports, experimental data, correspondence, newsletters, visits, joint meetings, and such other means as the Parties agree.
- B. Temporary assignment of personnel of one Party or of its contractors to the laboratory or facilities owned by the other Party or in which it sponsors research; each assignment shall be considered on a case-by-case basis.
- C. Execution of joint programs and projects, including those involving a division of activities between the Parties; each joint program and project shall be considered on a case-by-case basis.
- D. Use by one Party of facilities that are owned by the other Party or in which research is being sponsored by the other Party; such use of facilities may be subject to commercial terms and conditions.
- E. If either Party wishes to visit, assign personnel, or use the facilities owned or operated by entities other than the Parties to this Agreement, the Parties recognize that prior approval by such entities will in general be required regarding terms upon which such visit, assignment, or use shall be made.
- F. Any other form agreed between the Parties.

## ARTICLE III - SCOPE OF AGREEMENT

### A. USNRC Scope of Responsibility

Subject to the availability of appropriated funds, the USNRC will provide the following specified goods and services related to the nuclear reactor safety research area specified in this Agreement. Subject to VTT financial contributions as indicated in Article VI, the USNRC will provide the VTT with the following:

- Copies of all pertinent technical program documents such as quick-look reports, technical memoranda and notes, and laboratory reports as soon as they have received appropriate USNRC management review.
- Make available to the VTT the severe accident codes developed under this program and provide limited assistance to the VTT in the application of these codes and other related codes which may be available to the NRC for transfer to the VTT.
- Permit personnel sponsored by the VTT to participate in technical review meetings and technical progress meetings except for those meetings primarily concerned with administrative and fiscal matters;

- Facilitate visits by personnel sponsored by the VTT to sites at which work relevant to the objective is being carried out;
- Permit the assignment of personnel sponsored by the VTT to participate and work in the USNRC's severe accident research program and to have full and ready access to relevant documentation, severe accident codes and results as described above.

#### **B. VTT Scope of Responsibility**

Subject to the availability of appropriated funds, the VTT will provide the following specified goods and services related to the nuclear reactor safety research areas specified in this Agreement:

- The VTT will provide information to the USNRC about their national severe accident research projects, focusing currently on pressure vessel failure modes, core melt coolability, and containment leaktightness research as described in more detail in Part II of the Technical Appendix to this Agreement.
- The VTT will participate in the USNRC severe accident program and related programs in this area of nuclear safety research.
- Assessments will be done by the VTT or its contractors in applications of severe accident codes received from the USNRC under the scope of this Agreement. The assessments will consist of applications done on experimental facilities at which the VTT has access to and/or Finnish nuclear power plants. In general, the USNRC is expected to provide limited assistance in the specific VTT applications of NRC codes provided under this program.
- The VTT will provide the USNRC with comments on general collaboration resulting from VTT severe accident research corresponding to technical areas under the scope of this Agreement.

#### **ARTICLE IV - ADMINISTRATION OF THE AGREEMENT**

- A.** The USNRC and the VTT will each designate one representative to coordinate and determine the detailed implementation of this Agreement. These representatives may, at their discretion, delegate this responsibility to the appropriate technical staff with respect to a given issue. The single designated representative will be referred to as an Administrator of this Agreement. Any notices required under this Agreement will be addressed to the Administrators using the most efficient communication method.
- B.** The Agreement provides restrictions concerning dissemination of proprietary, confidential, or privileged information. Other information that may be restricted includes matters related to organization, budget, personnel, or management.
- C.** The USNRC and the VTT will endeavor to select technical personnel for assignment to these cooperative programs who can contribute positively to the programs. The USNRC and VTT technical personnel assigned for extended periods will be considered visiting

scientists (nonsalaried) within the programs in this Agreement and will be expected to participate in the conduct of the analysis and/or experiments as necessary.

- D. Each Party to this Agreement will have access to all reports written by its technical personnel assigned to the respective programs that derive from its participation in those programs.
- E. Travel costs, living expenses, and salaries will be borne by the Party who incurred them unless specified otherwise.

## ARTICLE V - EXCHANGE AND USE OF INFORMATION AND INTELLECTUAL PROPERTY

### A. General

The Parties support the widest possible dissemination of information provided or exchanged under this Agreement, subject both to the need to protect proprietary or other confidential or privileged information as may be exchanged hereunder, and to the provisions of the Intellectual Property Addendum, which is an integral part of this Agreement.

### B. Definitions (As used in this Agreement)

- 1. The term "information" means nuclear energy-related regulatory, safety, safeguards, waste management, scientific, or technical data, including information on results or methods of assessment, research, and any other knowledge intended to be provided or exchanged under this Agreement.
- 2. The term "proprietary information" means information created or made available under this Agreement which contains trade secrets or other privileged or confidential commercial information (such that the person having the information may derive an economic benefit from it or may have a competitive advantage over those who do not have it), and may only include information which:
  - a. has been held in confidence by its owner;
  - b. is of a type which is customarily held in confidence by its owner;
  - c. has not been transmitted by the owner to other entities (including the receiving Party) except on the basis that it be held in confidence;
  - d. is not otherwise available to the receiving Party from another source without restriction on its further dissemination; and
  - e. is not already in the possession of the receiving Party.

3. The term "other confidential or privileged information" means information, other than "proprietary information," which is protected from public disclosure under the laws and regulations of the country of the Party providing the information and which has been transmitted and received in confidence.

C. Marking Procedures for Documentary Proprietary Information

A Party receiving documentary proprietary information pursuant to this Agreement shall respect the privileged nature thereof, provided such proprietary information is clearly marked with the following (or substantially similar) restrictive legend:

"This document contains proprietary information furnished in confidence under an Agreement dated \_\_\_\_\_ between the United States Nuclear Regulatory Commission and the Technical Research Centre of Finland and will not be disseminated outside these organizations, their consultants, contractors, and licensees, and concerned departments and agencies of the Government of the United States and the Government of Finland without the prior approval of (name of transmitting Party). This notice will be marked on any reproduction hereof, in whole or in part. These limitations will automatically terminate when this information is disclosed by the owner without restriction."

This restrictive legend will be respected by the receiving Party and proprietary information bearing this legend will not be used for commercial purposes, made public, or disseminated in any manner unspecified by or contrary to the terms of this Agreement without the consent of the transmitting Party.

D. Dissemination of Documentary Proprietary Information

1. In general, proprietary information received under this Agreement may be freely disseminated by the receiving Party without prior consent to persons within or employed by the receiving Party, and to concerned Government departments and Government agencies (e.g., the Radiation and Nuclear Safety Authority (STUK)) in the country of the receiving Party.
2. In addition, proprietary information may be disseminated without prior consent:
  - a. to prime or subcontractors or consultants of the receiving Party located within the geographical limits of that Party's State, for use only within the scope of work of their contracts with the receiving Party in work relating to the subject matter of the proprietary information;
  - b. to domestic organizations permitted or licensed to construct or operate nuclear production or utilization facilities, or to use nuclear materials and radiation sources, provided that such proprietary information is used only within the terms of the permit or license (in Finland this includes the utilities Fortum Oyj and Teollisuuden Voima Oy); and

- c. to domestic contractors of organizations identified in D.2.b., above, for use only in work within the scope of the permit or license granted to such organizations;

Provided that any dissemination of proprietary information under D.2.a., b., and c., above, will be on an as-needed, case-by-case basis, will be pursuant to an agreement of confidentiality, and will be marked with a restrictive legend substantially similar to that appearing in V.C. above.

- 3. With the prior written consent of the Party furnishing proprietary information under this Agreement, the receiving Party may disseminate such proprietary information more widely than otherwise permitted in subsections 1. and 2.

~~The Parties will cooperate in developing procedures for requesting and obtaining approval for such wider dissemination, and each Party will grant such approval to the extent permitted by its national policies, regulations, and laws.~~

**E. Marking Procedures for Other Confidential or Privileged Information of a Documentary Nature**

A Party receiving under this Agreement other confidential or privileged information shall respect its confidential nature, provided such information is clearly marked so as to indicate its confidential or privileged nature and is accompanied by a statement indicating:

1. that the information is protected from public disclosure by the Government of the transmitting Party; and
2. that the information is transmitted under the condition that it be maintained in confidence.

**F. Dissemination of Other Confidential or Privileged Information of a Documentary Nature**

Other confidential or privileged information may be disseminated in the same manner as that set forth in paragraph D., Dissemination of Documentary Proprietary Information.

**G. Non-Documentary Proprietary or Other Confidential or Privileged Information**

Non-documentary proprietary or other confidential or privileged information provided in seminars and other meetings arranged under this Agreement, or information arising from the attachments of staff, use of facilities, or joint projects, will be treated by the Parties according to the principles specified for documentary information in this Agreement; provided, however, that the Party communicating such proprietary or other confidential or privileged information has placed the recipient on notice as to the character of the information communicated.

H. Consultation

If, for any reason, one of the Parties becomes aware that it will be, or may reasonably be expected to become, unable to meet the nondissemination provisions of this Agreement, it shall immediately inform the other Party. The Parties shall thereafter consult to define an appropriate course of action.

**ARTICLE VI - FINANCIAL CONSIDERATIONS**

In addition to the technical contributions indicated under Article III.B., the VTT will contribute financially to the NRC programs included in this Agreement. Upon signature of this Agreement, the VTT will pay the USNRC \$25,000.00 U.S. Dollars per year to continue to participate in the Cooperative Severe Accident Research Program. This payment will be followed by annual payments of \$25,000.00 U.S. Dollars during the month of January in 2005 and 2006.

**ARTICLE VII - DISPUTES AND WARRANTY OF INFORMATION**

- A. Cooperation under this Agreement will be in accordance with the laws and regulations of the respective countries. Any dispute or questions, between the Parties concerning the interpretation or application of this Agreement arising during its term will be settled by mutual agreement of the Parties.
- B. Information furnished by one Party to the other under this Agreement shall be accurate to the best knowledge and belief of the Party supplying the information. However, neither Party gives any warranty as to the accuracy of such information or shall have any responsibility for the consequences of any use to which such information may be put by the other Party or by any third Party.
- C. The USNRC makes no warranties, whatsoever, for the ability or suitability of any USNRC code or other analytical technique to perform in any particular manner for any particular purpose or to accomplish any particular task. The USNRC accepts no liability for damages of any type that may result from the use of its codes or other analytical techniques provided under this Agreement.

**ARTICLE VIII - OTHER CONSIDERATIONS**

- A. In the course of this cooperation, there may be requests by one Party to the other for specific in-kind services beyond the normal implementation of this Agreement. These requests will be considered on a case-by-case basis and may require specific funding. The requesting Party will cover the additional costs.
- B. Nothing contained in this Agreement will preclude a Party from using or disseminating information received without restriction by a Party from sources outside of this Agreement.
- C. All USNRC computer codes disseminated under this Agreement are to be considered privileged information unless otherwise noted, are protected as such by the USNRC, and shall be treated likewise by VTT. They are, in particular, subject to all the provisions of this Article including the requirements for an agreement of confidentiality (Article V) prior

to dissemination, with the exception that they need not be marked with the restrictive designation. The codes are subject to this protection in both object and source forms and as recorded in any media.

- D. The USNRC codes and other related analytical techniques covered under this Agreement and any improvements, modifications or updates to such codes or techniques, are for the purpose of reactor and plant systems safety research and licensing and will not be used for commercial purposes or for other benefits not related to the study of reactor safety without the prior consent of USNRC.
- E. Among the code uses that will be permitted under this Agreement are those related to research in the reactor safety area and analyses performed by the members or their contractors that can assist regulators and plant personnel in assessing the safety of the plant, analyzing operating events, and training of operators. Specific examples of permitted analyses include: design basis accidents (e.g., loss-of-coolant-accidents), anticipated transients, accident management and emergency operating procedures, mid-loop operation, analyses to support PRA success criteria, power upgrades and reload, and severe reactor accidents.

Prohibited uses of the code include: (1) analyses to develop a new reactor design and (2) analyses to support power upgrades and reload in the U.S. unless performed by a U.S. subsidiary.

- F. The USNRC codes and other related analytical techniques will not be advertised directly or by implication to obtain contracts related to the construction or servicing of nuclear facilities, nor will advertising imply that the USNRC has endorsed any particular analyses or techniques.
- G. All reports published within the scope of this Agreement and all meetings held will be in English.

## ARTICLE IX - FINAL PROVISIONS

- A. This Agreement will enter into force upon signature, with effect from January 1, 2004, and shall remain in force for a period of three years, unless extended by mutual agreement for an additional period under the same terms and conditions. All information protected by provisions of this Agreement as proprietary, confidential, privileged, or otherwise subject to restriction on disclosure shall remain so protected indefinitely, unless mutually agreed to otherwise in writing. The USNRC and the VTT recognize the benefits of international cooperation and will endeavor to obtain a mutually agreeable continuation of this Agreement before its expiration.
- B. Either Party may withdraw from the present Agreement after providing the other Party written notice at least 180 days prior to its intended date of withdrawal. The Party not withdrawing shall reserve the right to determine if the withdrawal will result in the other

Party receiving a disproportionate share of the expected benefit from this Agreement. If so, both Parties will endeavor to reach an equitable settlement of the matter through negotiation.

- C. All costs arising from implementation of this Agreement will be borne by the Party that incurs them except when specifically agreed to otherwise by both Parties.
- D. This Agreement may be amended by written agreement and concurrence of the Administrators of the Parties.

IN WITNESS WHEREOF, the Parties have signed the present Agreement.

FOR THE UNITED STATES NUCLEAR  
REGULATORY COMMISSION:

BY: Carol J. Paperelli, Jr.  
William D. Travers

TITLE: Executive Director  
for Operations

DATE: April 12, 2004

PLACE: Rockville, Maryland

FOR THE TECHNICAL RESEARCH CENTRE  
OF FINLAND:

BY: Mikko Kara Seppo Vuori  
Mikko Kara  
Seppo Vuori

TITLE: Research Director Research Manager

DATE: June 2, 2004 June 2, 2004

PLACE: Espoo, Finland Espoo, Finland

## INTELLECTUAL PROPERTY ADDENDUM

Pursuant to Article V of this Agreement:

The Parties shall ensure adequate and effective protection of intellectual property created or furnished under this Agreement and relevant implementing arrangements. The Parties agree to notify one another in a timely fashion of any inventions or copyrighted works arising under this Agreement and to seek protection for such intellectual property in a timely fashion. Rights to such intellectual property shall be allocated as provided in this Addendum.

### I. SCOPE

- A. This Addendum is applicable to all cooperative activities undertaken pursuant to this Agreement, except as otherwise specifically agreed by the Parties or their designees.
- B. For purposes of this Agreement, "intellectual property" shall have the meaning found in Article 2 of the Convention Establishing the World Intellectual Property Organization, done at Stockholm, July 14, 1967; *viz.*, 'intellectual property' shall include the rights relating to:
  - literary, artistic and scientific works,
  - performances of artists, phonograms, and broadcasts,
  - inventions in all fields of human endeavor,
  - scientific discoveries,
  - industrial designs,
  - trademarks, service marks, and commercial names and designations,
  - protection against unfair competition, and all other rights resulting from intellectual activity in the industrial, scientific, literary or artistic fields.
- C. This Addendum addresses the allocation of rights, interests, and royalties between the Parties. Each Party shall ensure that the other Party can obtain rights to intellectual property allocated in accordance with the Addendum by obtaining those rights from its own participants through contracts or other legal means, if necessary. This Addendum does not otherwise alter or prejudice the allocation between a Party and its nationals, which shall be determined by that Party's laws and practices.
- D. Disputes concerning intellectual property arising under this Agreement should be resolved through discussions between the concerned participating institutions or, if necessary, the Parties or their designees. Upon mutual agreement of the Parties, a dispute shall be submitted to an arbitral tribunal for binding arbitration in accordance with the applicable rules of international law. Unless the Parties or their designees agree otherwise in writing, the arbitration rules of the United Nations Commission on International Trade Law (UNCITRAL) shall govern.

E. Termination or expiration of this Agreement shall not affect rights or obligations under this Addendum.

## II. ALLOCATION OF RIGHTS

- A. Each Party shall be entitled to a non-exclusive, irrevocable, royalty-free license in all countries to translate, reproduce, and publicly distribute scientific and technical journal articles, reports, and books directly arising from cooperation under this Agreement. All publicly distributed copies of copyrighted work prepared under this provision shall indicate the names of the authors of the work unless an author explicitly declines to be named.
- B. Rights to all forms of intellectual property, other than those rights described in Section II(A) above, shall be allocated as follows:
  1. Visiting researchers, for example, scientists visiting primarily in furtherance of their education, shall receive intellectual property rights under the policies of the host institution. In addition, each visiting researcher named as an inventor shall be entitled to share in a portion of any royalties earned by the host institution from the licensing of such intellectual property.
  2. (a) For intellectual property created during joint research, for example, when the Parties, participating institutions, or participating personnel have agreed in advance on the scope of work, each Party shall be entitled to obtain all rights and interests in its own country. The Party in whose country the invention was made shall have first option to acquire all rights and interests in third countries. If research is not designated as "joint research," rights to intellectual property arising from the research will be allocated in accordance with paragraph II.B.1. In addition, each person named as an inventor shall be entitled to share in a portion of any royalties earned by either institution from the licensing of the property.  
(b) Notwithstanding paragraph II.B.2.(a), if a type of intellectual property is available under the laws of one Party but not the other Party, the Party whose laws provide for this type of protection shall be entitled to all rights and interests worldwide. Persons named as inventors of the property shall nonetheless be entitled to royalties as provided in paragraph II.B.2.(a).

## TECHNICAL APPENDIX

### PART I: USNRC SEVERE ACCIDENT RESEARCH PROGRAM

#### 1. INTEGRATED SEVERE ACCIDENT CODE

- MELCOR code development, assessment, and maintenance
- MELCOR Cooperative Assessment Program (MCAP)

## TECHNICAL APPENDIX

### PART II: VTT SEVERE ACCIDENT RESEARCH PROGRAM AREAS

National severe accident research projects focusing on:

- Pressure vessel failure modes
- Core melt coolability
- Behavior and survivability of seal materials in containment penetrations under severe accident condition.